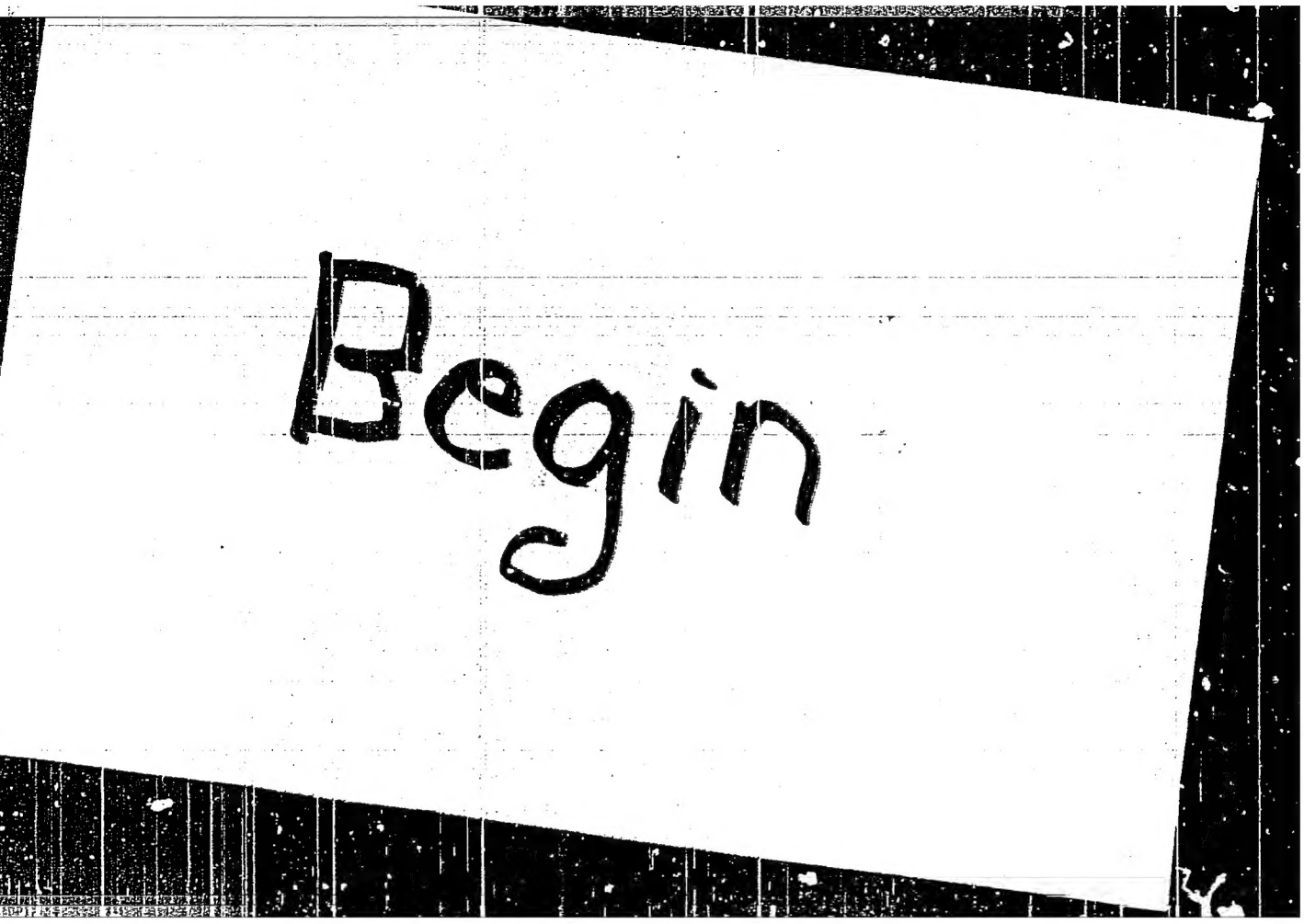

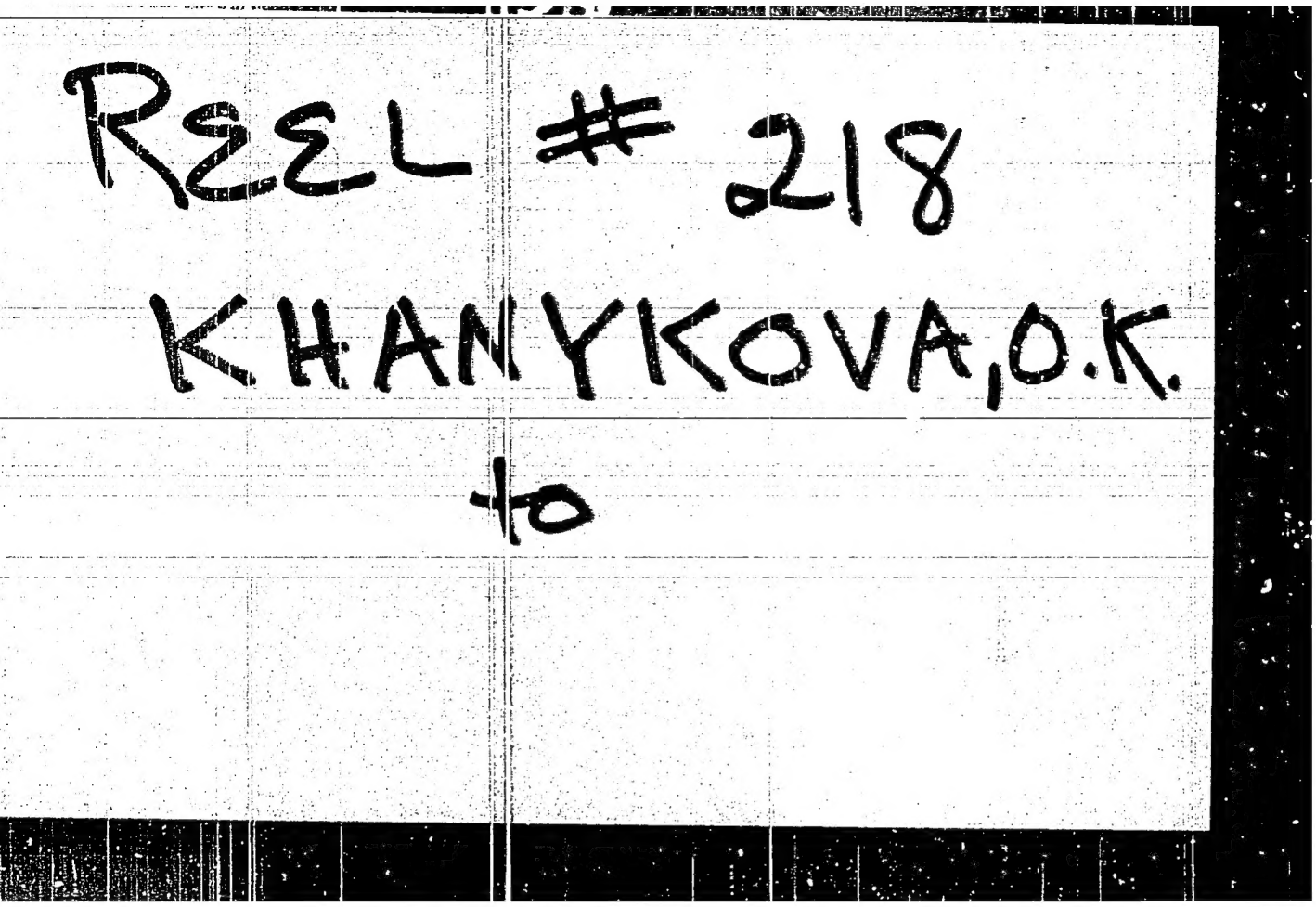

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Assimilation of C^{14}-labelled vitamin B_6 in experimental leukemia under conditions of tryptophan loading. Probl. gemat. i perel. krovi 9 no.6:40-41 Je '64. (MIRA 18:2)

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Name KHANZHIN, Aleksey Fedorovich

Dissertation Method of Coordinating and Coordinated-Figure Merometerology in Topographical Anatomy

Degree Doc Vet Sci

Affiliation Kirgiz Agr Inst imeni Skryabin

Defense Date, Place 2 Jul 56, Council of Moscow Vet Acad

Certification Date 15 Dec 56

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PANCHENKO, A.V.; USHAKOV, K.A., doktor tekhnicheskikh nauk, professor, zaslushennyy deyatel' nauki i tekhniki; retsenzent; TURKUS, V.A., dotsent, retsenzent; KHAZHONKOV, V.I., kandidat tekhnicheskikh nauk; retsenzent; VEREVKIN, N.I., kandidat tekhnicheskikh nauk, retsenzent; DIMANT, P.I., inzhener, retsenzent; GEL'MAN, D.Ya., redaktor; LABUS, G.A., tekhnicheskiy redaktor.

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KHALUGA, A.K., inzhener; VEBER, R.Ya., inzhener; BYCHKOV, A.G., kandidat tekhnicheskikh nauk; KHANZHONKOV, V.I., kandidat tekhnicheskikh nauk.

Pneumatic ridger for milled peat. Mekh.trud.rab. 10 no.6:40-41 Je '56. (MLRA 9:8)

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(Railroads--Cars--Heating and ventilation)

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14(1) PHASE I BOOK EXPLOITATION SOV/2685

Tsentral'nyy aero-gidrodinamicheskiy institut

Ventilyatory i vozdukhoprovody (Ventilators and Air Ducts) Moscow, Oborongiz, 1959. 249 p. (Series: Promyshlennaya aerodinamika, sbornik No. 12) Number of copies printed not given.

Ed. (Title page): K.A. Ushakov, Professor; Ed. (Inside book): A.S. Ginevskiy, Candidate of Technical Sciences; Ed. of Publishing House: E.A. Shekhtman; Tech. Ed.: I.M. Zudakin; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers, technicians and scientific workers specializing in the field of industrial aerodynamics and ventilation.

COVERAGE: This collection of 14 articles deals with problems of ventilation technology. Results of experimental and theoretical investigations of the aerodynamic characteristics of axial and centrifugal fans are described. Some designs of new, highly economical centrifugal fans are presented and the drag coefficients of various ducts and elements of ventilation systems are given. No personalities are mentioned. References follow most articles.

11. Khanzhonkov, V.I. Decreasing Aerodynamic Drag With Circular Rib Openings or Recesses 181
The article explains the principle of the action of circular ribs and recesses and their optimum geometrical dimensions for which inlet drag is minimum.

12. Nosova, M.M. and N.F. Tarasov. Drag in Inlet and Exhaust Ventilation Shafts 197
The author gives the results of an experimental investigation of models of inlet and exhaust shafts of square and rectangular cross section. On the basis of this investigation, two designs were selected and are now adopted in industry. A description of these shafts is given.

13. Yudin, Ye.Ya. Experimental Investigation of a Screen-type Silencer 216
The author describes the experimental installation, explains the method of investigation and gives the results obtained. He also gives a method for applying the results obtained to acoustic calculations of units with screen silencers.

14. Khanzhonkov, V.I. Wind Protection for Open-air Sports Areas 239
The author considers a number of designs and discusses their comparative merits under various wind conditions. Diagrams and photographs of the models investigated and graphs of wind velocities and pressure distribution are given.

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MELIKSETYAN, G.M., inzh.; KHALUGA, A.K., kand.tekhn.nauk; KHANZHONKOV, V.I., kand.tekhn.nauk

PVP-6m pneumatic ridger for milled peat. Torf.prom. 36 no.1:22-24 '59. (MIRA 12:3)

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KHANZHONKOV, V.I.

Wind protection of open stadiums. Prom. aerodin. no.12:239-250 '59. (MIRA 13:1)
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KHANZHONKOV, V.I.; DAVYDENKO, N.I.

Resistance of side holes in the end section of a pipe. Prom. aerodin. no.15:38-46 '59. (MIRA 13:8)
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no.15:85-91 '59. (MIRA 13:8)
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Aerodynamic resistance of flat channels with a reverse symmetrical turn. Prom.aerodin. no.21:151-166 '62. (MIRA 15:4)
(Gas dynamics)

ACCESSION NR: AT3002069 S/2632/62/000/023/0174/0199

AUTHOR: Khanzhonkov, V. L.

TITLE: Impingement of an annular jet onto a target

SOURCE: Moscow. Tsentral'nyy aero-gidrodinamicheskiy institut. Promyshlennaya aerodinamika, no. 23, 1962. Struynyye techeniya, 174-199

TOPIC TAGS: aerodynamics, hydrodynamics, fluid dynamics, gas dynamics, jet, annular jet, conical annular jet, shield, screen, target, impingement, pressure distribution on nozzle, pressure distribution on target, ground effect, GEM, ground-effect machine, hovercraft, discharge coefficient, pressure coefficient, nozzle-target inclination, incidence, angle of attack

ABSTRACT: The paper describes an experimental attempt to determine the aerodynamic characteristics of annular nozzles and to investigate the flow of an annular jet impinging on a flat target. Pressures were determined both on the face plate of the annular nozzle and on the target. Three annularnozzles were constructed with a conicity of the annular flow of 0, 30, and 45°. A 400-mm-diam insert into a 480-mm-diam cylindrical tube left a 40-mm-wide ejection slot. The conical nozzles were substantially similar but had convergent nozzle adapters. The

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pressures on the face plate of the annular nozzle (comprised within the annular slot) were measured at 25 static-pressure orifices 1-mm in diam. The target was a circular disk 950-mm diam. The obverse impingement side was flat, the reverse side was reinforced with stiffener ribs. 125 static-pressure orifices served for pressure measurement. The alignment of the nozzle axis and the target axis could be varied within a few degrees. The test setup comprised a plenum chamber, a diffuser, an ejection-nozzle holder, and a target holder which could be placed at various distances from the nozzle. The effluent speed of the air from the annular nozzle was varied from 6 to 54 m/sec, resulting in a range of nozzle Reynolds Numbers (RN) from 0.3 to $2.8 \cdot 10^5$. Results: (1) Effect of the RN on the pressure coefficient (C_p). The C_p was found to be practically independent of the RN for all velocities and nozzle conicities. Consequently, the outflow from the annular jet nozzle onto the target is regarded as selfsimilar over the RN range tested. (2) Pressure distribution on the face plate of the annular nozzle. Both the pressure distributions and a hydrodynamic-channel test with Al-powder suspension in water showed that the annular jet fuses into a single flow at a certain distance from the nozzle. Within that distance (and in the absence of a target plate), the inner portion of the fluid comprised within the annular jet exhibits a toroidal flow with return currents. The base pressure is lower than the atmospheric pressure; this contributes to the convergent, curvilinear, flow of the fluid. With increasing

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conicity the pressure difference decreases, and for a conicity of 45° the resultant face-plate pressure is atmospheric. Tests with a 2° relative angle between the axes of the nozzle and the target show that even this small angle leads to a sharp reduction in pressure in the nozzle portion placed closer to the target, but only a small change in pressure in the more distant portion of the nozzle. This drop in pressure increases with increasing distance between nozzle and target. The pressure redistribution becomes more pronounced with increasing nozzle conicity. (3) Pressure distribution on the target. An annular pressure peak occurs on the target in correspondence to the nozzle efflux which impinges and separates there into an inwardly and an outwardly directed flow. When the nozzle and the target axes are inclined 2° relative to one another, a sharp increase in pressure occurs on the nearer side of the target and a loss in pressure on the diametrally opposite side, with a substantial drop in pressures in the areas comprised within the annular high-pressure peak. (4) Pressure and discharge coefficients of annular nozzle. The variations of the pressure and discharge coefficients versus target distance vary monotonously and smoothly, until a distance close to the "critical" distance is reached at which the annular jet fuses into a single-core jet prior to reaching the target. Beyond that distance the pressure coefficients cease to vary with distance. The discharge coefficient decreases with increasing conicity. The high discharge coefficient for 0 conicity is explained by the difference in pressure distribution

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ACCESSION NR: AT3002069

over the cross section, namely, atmospheric pressure on the outside and a lower pressure on the inside. With increasing approach of the target to the nozzle the low-pressure effect is lost and the discharge coefficient decreases. Orig. art. has 24 figures.

ASSOCIATION: none

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L 08544-67 EWT(d)/EWT(l)/EWP(m)/EWT(m)/EWP(h) WW/JT

ACC NR: AT6034562 SOURCE CODE: UR/2632/66/000/027/0145/0179

AUTHOR: Khanzhonkov, V. I.

65

B+1

ORG: none

TITLE: Aerodynamic characteristics of annular jet flow about a screen

SOURCE: Moscow. Tsentral'nyy aero-gidrodinamicheskiy institut. Promyshlennaya aerodinamika, no. 27, 1966. Struynyye techeniya (Jet streams), 145-179

TOPIC TAGS: aerodynamics, flow structure, annular jet, jet flow, annular nozzle, air cushion vehicle, ground effect machine

ABSTRACT: A detailed experimental investigation of the aerodynamic characteristics of annular jets impinging on a screen is presented. This article is an extension of the author's previous work on annular jets with relative annulus width of 10% of the nozzle base diameter (Promyshlennaya aerodinamika, no. 23, Oborongiz, 1962). Knowledge of the interactions of annular and plane jets with the ground which generate a lift force should be of prime interest to the design of air cushion vehicles. Six different annular nozzle configurations were investigated: 1) three with an annulus width b = 8 mm and angles of inclination ϕ = 0, 30° and 45° with respect to the vertical; 2) two with an annulus width b = 20 mm with angles of inclination ϕ = 0 and 45°; and 3) one with an annulus width b = 25 and angle ϕ = 30°. Fig. 1 shows a nozzle of the first group. A test stand shown in Fig. 2 was used to support the nozzle config-

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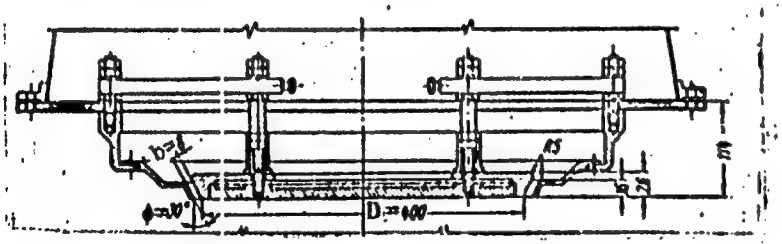

Fig. 1. Annular nozzle with ϕ = 30° and b/D = 0.05

urations and the screen mounted on a movable platform. The distance from the nozzle to the disk and its angle to the nozzle axis could be varied and measured on a scale. The design details of the nozzles are described and geometrical dimensions are given in a table. The technique used for interpretation of the experimental data and measuring techniques are also described. Four series of tests were carried out in the flow velocity range from 6 to 55 m/sec in order to determine: 1) the effect of the Reynolds number on the nondimensional pressure coefficient $\bar{p}$ and on the nozzle flow rate coefficient α_c; 2) pressure distribution on the nozzle base plate; 3) pressure distribution on the screen; and 4) the effect of the ratio of the annulus width b to the distance h from the nozzle base to the disk on the pressure coefficient or on the nozzle bottom and flow rate coefficient α_c at various values of the relative width of the annulus b/D and angle α between the base plate and disk. An analysis of the experimental data presented in a great number of graphs shows the effects of the

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I. 08514-67

ACC NR: AT6034562

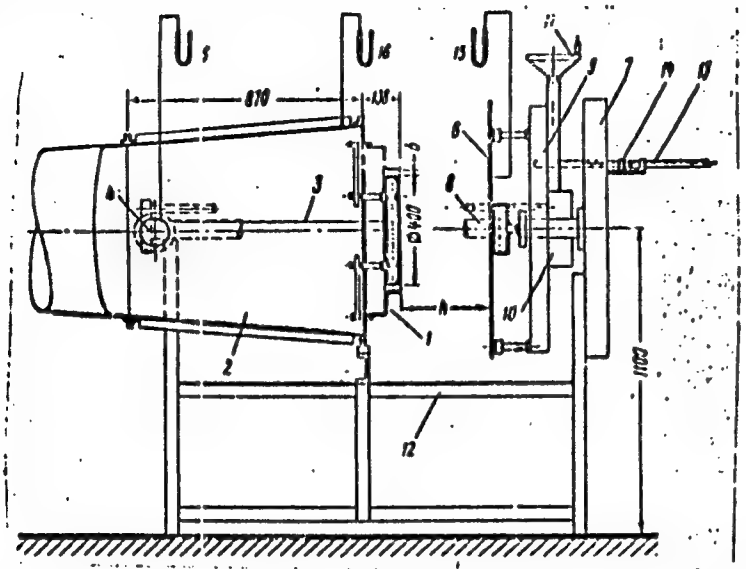

Fig. 2. Experimental setup for investigating annular jet flows on a screen

1 - Nozzle configuration; 2 - outer shell; 3 - rubber tube; 4 - collector; 5,15,16 - pressure gages; 6 - screen; 7 - mounting stand; 8 - guide; 9 - plate; 10 - worm gear; 11 - wheel; 12 - frame; 13 - coupling rod; 14 - scale.

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L 08544-67

ACC NR: AT6034562

Reynolds number, the ratios b/h and b/D, the angle of the annular jet ϕ, the screen and its distance h, and the angle of inclination with respect to the base plate upon the pressure and flow rate coefficients, and also the pressure distribution on the base plate and screen. Orig. art. has: 44 figures and 8 formulas.

SUB CODE: 01,20/ SUBM DATE: none / ATD PRESS: 5104

Card 1/1

L 04691-67 EWT(d)/EWT(1)/EWP(m)/EWT(m)/ TCH

ACC NR: AP6023937 SOURCE CODE: UR/0310/66/000/006/0025/0027

AUTHOR: Khanzhonkov, V.

ORG: TsAGI im. Prof. N. Ye. Zhukovskiy, Moscow

TITLE: Calculation parameters of hovering nozzle-type air-cushion vehicles

SOURCE: Rechnoy transport, no. 6, 1966, 25-27

TOPIC TAGS: ground effect machine, air cushion vehicle, hovercraft, lift coefficient

ABSTRACT: Hovering over a solid surface is one of the fundamental conditions for which calculations of the aerodynamic and power characteristics of an ACV must be made. By the method presented for calculating an ACV with a double-flow annular-nozzle arrangement, the power characteristics and aerodynamic parameters for the fan can be found if the weight of the vehicle, its hovering height, airflow configuration, and the nozzle arrangement are known.

A formula is derived for finding the power required per ACV unit weight, which varies with the ratio G/S (G = weight of the ACV; S = overall area of the nozzles. The formula contains coefficients for the lifting force (C_y), the nozzle airflow rate (α_c), and the airflow resistance (ξ_k), and equations are given for determining these coefficients. The equation for C_y takes into account the air-cushion pressure on the bottom, the pressure at the nozzle sections, and the reactive

Card 1/2 UDC: 629.122.69.001

L 04691-67

ACC NR: AP6023937

forces of the air streams. The nozzle airflow-rate coefficient α_c takes into account the flow rates of both annular nozzles, and the airflow resistance coefficient ξ_k takes into account the total area of the airflow apertures. Calculated and experimentally derived values for the air-cushion pressure and the airflow rate show good agreement within a b/h range of 0.1—0.8 (b = nozzle width; h = hovering height); in relation to b/D_H (D_H = outside diameter of the outer annular nozzle) the values of Cy show a maximum difference of ~ 6%. A method is presented for evaluating the required air pressure and the air expenditure. The most advantageous dimensions of the nozzle system can be found by varying its geometric parameters. Orig. art. has: 3 figures and 21 formulas. [ATD PRESS: 5061-F]

SUB CODE: 01 / SUBM DATE: none

Card 2/2 fv

KUKLIN, G.V.; KHANZHIN, A.G.

Observations of lunar occultations of Venus in Daliny. Astron. tsir. no.215:32-33 O '60. (MIRA 14:3)
(Occultations)

YEGOROVA, A.G.; GIMMERVERT, R.V.; LOPASHOVA, Ye.V.; YELENSKAYA, A.N.; LOBANOVA, A.Ya.; KHANZHINA, Ye.B., red.; SHILLING, V.A., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[System of preparing the rye-bread dough in an N.F.Gatilin outfit] Rezhim prigotovleniia testa dlia rzhanogo khleba v agregate N.F.Gatilina. By A.G.Egorova i dr. Leningrad, 1961. 16 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Khlebopekarnaia promyshlennost', no.1) (MIRA 14:10)
(Dough) (Baking--Equipment and supplies)

LYUMKIS, S.Ye. (Orsk); CHERNOV, A.I. (Orsk); Prinimal uchastiye KHANZHOV, A.M.

Forms of nickel losses with waste slags during the shaft furnace smelting of nickel ores for the production of matte. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.4:81-88 Jl-Ag '63. (MIRA 16:10)

ZAKHAROV, G.M.; NIKITINSKAYA, T.I.; KHAPACHEV, A.G.

Electric conductivity of fluorite. Fiz.tver.tela 1 no.5:835-837 My '59. (MIRA 12:4)

1. Leningradskiy politekhnicheskiy institut im. M.I. Kalinina.
(Fluorite—Electric properties)

87368

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6.4720

S/120/60/000/004/007/028
E032/E414

AUTHORS: Zakharov, G.M., Nikitinskaya, T.I. and Khapachev, A.G.

TITLE: A Pulse Method of Measuring Large Resistances

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.4, pp.82-84

TEXT: High voltage pulses of approximately rectangular form were produced by the circuit shown in Fig.1. The circuit is based on the high-voltage hydrogen thyratrons ТГИ 1-90/8 (TGI 1-90/8) and an artificial LC shaping line as shown. With suitably chosen parameters of the shaping line, the length of the pulse could be made of the order of 1 μsec while the length of the leading edge not more than 0.1 μsec. The processes which take place in the measuring circuit can be represented approximately by the equivalent circuit shown in Fig.3. In this figure, R and C are the resistance and capacitance of the specimen under investigation, R_1 is the resistance of the generator and R_2 is the resistance of the galvanometer. Since $R \gg R_1 + R_2$, the time constant τ is given by $\tau = C(R_1 + R_2)$. If the length of the rectangular pulse is much greater than the time constant, the form of the rectangular pulse across the specimen will not be distorted. The dependence of the current on time is shown schematically in Fig.4

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A Pulse Method of Measuring Large Resistances

where i_3 and i_p correspond to the charge and discharge currents of the capacitor and i_n represents the conduction current pulses through R. The mean current in the circuit is given by $i_c = i_n t/T$. The form of the peaks i_3 and i_p is not necessarily the same since it is determined by the structure of the leading and trailing edges of the voltage pulse. However, this will have little effect on the magnitude of the mean current since the amount of electricity in the discharge and charge of the capacitor is the same. From the measured magnitude of i_c one can determine i_n if t and T are known, and hence R can be calculated. The resistance of the instrument which records the current should not be too high because large values of this resistance lead to larger time constants. A mirror galvanometer can be conveniently used for this purpose. In the instrument employed by the present authors, the sensitivity of the galvanometer was 10^{-10} amp/division. the amplitude of the pulses was 1 kV, and $T/t = 10^3$. The upper limit of the resistances which could be measured was thus 10^{10} ohm although an extension to

Card 2/4

87268
S/120/60/000/00?/007/0??
E032/E414

A Pulse Method of Measuring Large Resistances

10^{12} ohm is said to be possible. There are 4 figures and 5 references: 4 Soviet and 1 non-Soviet.

ASSOCIATION: Leningradskiy politekhnicheskiy institut
(Leningrad Polytechnical Institute)

SUBMITTED: July 1, 1959

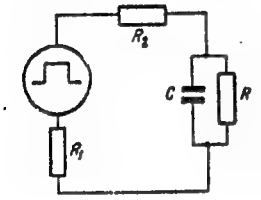

Рис. 3. Эквивалентная схема измерительной цепи. R, C — сопротивление и ёмкость измеряемого образца, R_1 — сопротивление генератора, R_2 — сопротивление гальванометра

Fig.3.

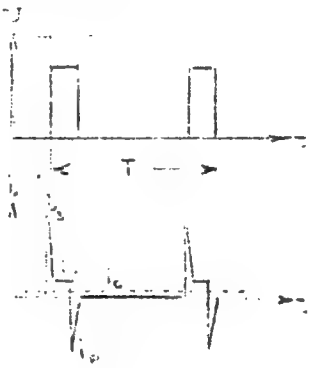

Fig.4.

Card 3/4

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S/120/60/000/004/007/028
E032/E414

A Pul[illegible] Method of Measuring Large Resistances

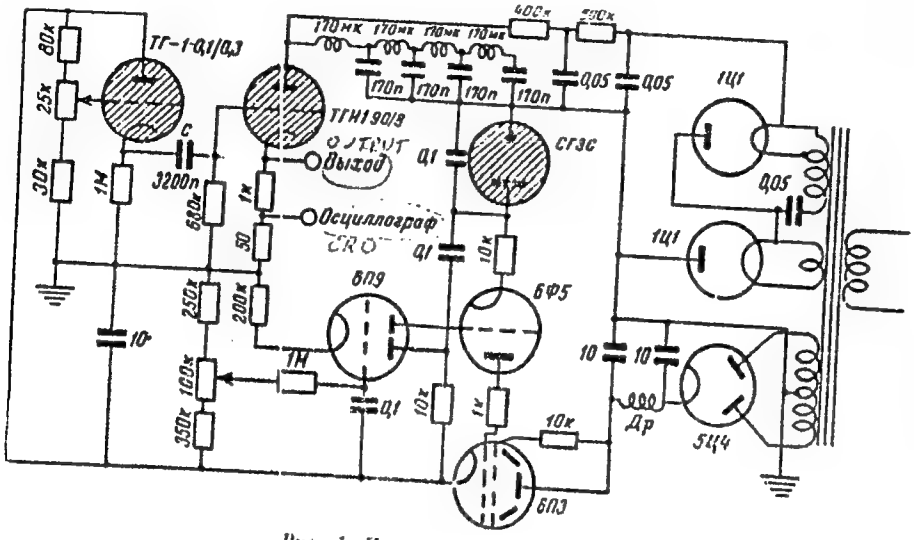

Рис. 1. Принципиальная схема

Card 4/4

Orig Pub : Dokl. AN SSSR, 1955, 105, No 1, 50-53

Abstract : The luminescence yield of a system with three energy levels is calculated and it permits resolving the fundamental problem of whether the value of the energy yield φ can exceed unity. Attempts found in the literature of a thermodynamic proof of the impossibility of $\varphi > 1$ are not satisfactory. The energy yield of luminescence of a system with three levels (Pringsheim model) (Pringsheim, P., Journal of Physics, 1949, 10, 495) is calculated

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USSR/Optics - Physical Optics.

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7748 K-5

in detail with allowance for the available thermal radiation in the same way as in the workd listed for a system with two energy levels (Referat Zhur Fizika, 1956, 17898, 23129). A rarefied thin layer of luminescent gas is considered, to make it possible to disregard the reverse reaction of the luminescence on the electron transitions of the radiating systems. It is shown that in the anti-Stokes region φ can be greater than unity and that this does not contradict the second law of thermodynamics. The energy of a luminescent body together with the excitation energy is transferred to the surrounding medium, the temperature of which is lower than the temperature of the exciting body. This, as indicated by Pringsheim, is analogous to the action of refrigerator. It is shown that it is possible to have "negative" luminescence, i.e., not an excess above the background of thermal radiation, but a deficiency of radiation, having a finite duration.

Card 2/2

- 44 -

S/170/60/003/03/09/034
B014/B007

AUTHOR: Khapalyuk, A. P.

TITLE: The Calculation of the Optical Properties of a Pile of Plane-parallel Layers

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 3, pp. 59-68

TEXT: In his introduction, the author refers to the method of calculating the optical properties of thin layers, which was suggested by A. G. Vlasov (Ref. 1). In the present paper an exact solution of the Maxwell equations for an arbitrary system of thin plane-parallel layers is given. The author proceeds from the Maxwell equations (1). By means of a complex Fourier transformation followed by integration, the algebraic equations (3) are obtained from the Maxwell equations. From these algebraic equations the formulas for the calculation of absorbing and non-absorbing layers are derived in a complex calculation. The formulas show the dependence of the reflection coefficients and absorption coefficients on the direction of the incident light. The author finally thanks B. I. Stepanov for advice. There are 1 figure and 14 references: 10 Soviet,

Card 1/2

The Calculation of the Optical Properties of a Pile of Plane-parallel Layers

S/170/60/003/03/09/034
B014/B007

1 Czech, 1 English, and 2 French.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet im. V. I. Lenina, g. Minsk

(Belorussiya State University imeni V. I. Lenin, City of Minsk)

√C

Card 2/2

KHAPALYUK, A.P.

Passage of light through the bottom of a series of plane parallel layers. Inzh.-fiz.zhur. no.5:46-58 My '60. (MIRA 13:8)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina, Minsk.
(Magneto-optics)

KHAPALYUK, A.P.

Passage of light through the crystal-isotropic medium interface. Dokl.AN BSSR 4 no.12:505-509 D '60. (MIRA 14:2)

1. Institut fiziki AN BSSR. Predstavleno akademikom AN BSSR B.I. Stepanovym.

(Crystal optics)

41007

S/058/62/000/009/036/069
A006/A101

AUTHORS: Khapalyuk, A. P., Stepanov, B. I.

TITLE: Conditions of generating radiations by a plane-parallel layer

PERIODICAL: Referativnyy zhurnal, Fizika, no. 9, 1962, 7, abstract 9Zh43 ("Izv. AN BSSR, Ser. fiz.-tekhn. n.", 1961, no. 4, 132 - 133)

TEXT: The authors present and analyze formulae for the coefficient of transmission and reflection of electromagnetic waves by a plane-parallel layer with a negative absorption coefficient in a homogeneous medium and in two dissimilar media. For the case of a homogeneous surrounding medium the conditions of wave generation are as follows:

$$r = \exp\left(\frac{4\pi\chi l}{\lambda}, \frac{2\pi\nu}{c} nl - \operatorname{arc\,tg}\frac{2n_{med}\chi}{n_{med}^2 - n^2 - \chi^2}\right) = 1,$$

where r is the Fresnel reflection coefficient on the "layer-medium" boundary; n and χ are the real and imaginary parts of the complex refractory index of the plate; n_{med} is the index of medium refraction, λ and ν are the wavelength and

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KHAFALYUK

"The possibility of generation of radiation by a system of plane-parallel plates."

Self-luminescence of a pile of plane-parallel plates with positive as well as negative absorbtion coefficients was analyzed.

The report presented at the 11th Conference on Luminescence (Molecular luminescence and luminescence analysis) Minsk, 10-15 Sept. 1962.

9,3700

S/250/62/006/005/004/007
I024/I224

AUTHOR: Khapalyuk A. P.

TITLE: Electromagnetic field inside a plane-parallel layer under conditions of resonant absorption

PERIODICAL: Akademiya nauk Belarusskay SSR. Doklady, v. 6, no. 5, 1962, 301-304

TEXT: By solving the system of Maxwell's equations with the corresponding boundary conditions (which exclude outgoing waves) for four plane waves normally incident on the surface of the layer, relations are obtained, connecting the thickness and refractive index of the layer under resonant absorption. Expressions for the electric and magnetic field intensities, electric and magnetic energy densities, Poynting vector and absorption inside the layer are then derived. Simplified expressions for the Poynting vector and energy density are found for the particular case of similar bordering media. The case of resonant absorption treated in this paper is analogous to the case of light generation in a layer with negative absorption coefficient. There is one figure.

ASSOCIATION: Beloruskii gosudarstvenyi universitet im. V. I. Lenina (Byelorussian State University im. V. I. Lenin)

SUBMITTED: March 14, 1962

Card 1/1

h1951

Y-2976

S/194/62/000/009/061/100
D95/D308

AUTHORS: Khapalyuk, A. P, and Styepanov, B. I.

TITLE: Conditions for the generation of radiation by a plane-parallel layer

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 9, 1962, 7, abstract 9Zh43 (Izv. AN BSSR; Ser. fiz.-tekhn. n., no. 4, 1961; 132-133)

TEXT: Formulas are given and investigated for the transmission and reflection coefficients of electromagnetic waves by plane-parallel layers with negative absorption coefficients in a homogeneous medium and in two different media. The conditions for the generation of waves in the case of a homogeneous surround medium have the form $r = \exp(4\pi\chi 1/\lambda)$, and $(2\pi\nu/c)nl - \tan^{-1}[2n_m\chi/(n_m^2 - n^2 - \chi^2)] = \pi s$, where r is the Fresnel reflection coefficient at the layer-to-medium boundary, n and χ are the real and imaginary parts of the complex refractive index of the slab, n_m is the re-

Card 1/2

fractive index of the medium, λ and ν are the wavelength and frequency of light, and s is an integer. The sensitivity of the generation conditions to the second of the above conditions is pointed out, since a variation of layer thickness by 0.015λ will no longer lead to generation but to damping of waves. [Abstracter's note: Complete translation.]

Card 2/2

KHAPALYUK, A.P.

Theory of circular optical axes. Opt. i spektr. 12 no.1:106-110 Ja '62. (MIRA 15:2)

(Crystal optics)

KHAPALYUK, A.P.

Electromagnetic fields inside a plane-parallel layer under conditions of resonance absorption. Dokl. AN BSSR 6 no.5:301-304 My '62. (MIRA 15:6)

1. Belorusskiy gosudarstvennyy universitet im. V.I. Lenina. Predstavleno akademikom AN BSSR B.I. Stepanovym.
(Electromagnetic waves)

KHAPALYUK, A.P.; STEPANOV, E.I.; SOTSKIY, B.A.

Electromagnetic fields in a plane-parallel layer under self-excitation. Opt.i spektr. 13 no.2:282-285 Ag '62. (MIRA 15:11)

(Optics, Physical)

KHAPALYUK, A.P.

Transmission of normally incident light through an anisotropic plate. Kristallografiia 7 no.4:581-588 Jl-Ag '62. (MIRA 15:11)

1. Belorusskiy gosudarstvennyy universitet imeni V.I.Lenina.
(Crystallography, Mathematical) (Light—Transmission)

KHAPALYUK, A.P.

Circular optical axes in absorbing crystals. Kristallofrafiia 7 no.5: 724-729 S-O '62. (MIRA 15:10)

1. Belorusskiy gosudarstvennyy universitet imeni Lenina.
(Crystallography)

STEPANOV, B.I.; KHAPALYUK, A.P.

Transmissive and reflective power of a plane-parallel layer under conditions of amplification and generation. Opt.i spektr. 13 no.5:714-720 N '62. (MIRA 15:12)
(Optical measurements) (Radiation)

STEPANOV, B.I.; GONCHARENKO, A.M.; IVANOV, A.P.; SAMSON, A.M.; SOTSKIY, B.A.; KHAPALYUK, A.P.

Generation of radiation from an infinite plane-parallel layer. Izv.AN SSSR.Ser.fiz. 27 no.4:460-465 Ap '63. (MIRA 16:4)
(Masers) (Electric resonators)

KHAPALYUK, A.P.

Generation of radiation by a system of plane-parallel layers.
Izv.AN SSSR.Ser.fiz. 27 no.4:477-482 Ap '63. (MIRA 16:4)
(Masers) (Radiation)

APANASEVICH, P.A.; BORISEVICH, N.A. VOIOD'KO, L.V.; GLADCHENKO, L.F.; GRIBKOVSKIY, V.P.; GURINOVICH, G.P.; IVANOV, A.P.; KUZNETSOVA, V.V.; PIKULIK, L.G.; PILIPOVICH, V.A.; RUBANOV, A.S.; RUBANOV, V.S.; SAMSON, A.M.; SARZHEVSKIY, A.M.; SOLOV'YEV, K.N.; UMREYKO, D.S.; KHAPALYUK, A.P.; YEL'YASHEVICH, M.A., akademik, red.

[Interaction between nonequilibrium radiation and matter] Vzaimodeistvie neravnovesnogo izlucheniia s veshchestvom. Minsk, Nauka i tekh. ika, 1965. 223 p. (MIRA 18:3)

1. Akademiya nauk SSSR. Institut fiziki. Akademiya nauk Belorusskoy SSR (for Yel'yashevich).

L 11998-66 EWT(d)/EWT(l)/T IJP(c)
ACC NR: AP5022862 SOURCE CODE: UR/0051/65/019/003/0387/0391

AUTHOR: Khapalyuk, A. P.

ORG: none

TITLE: Range of validity of the transport equations

SOURCE: Optika i spektroskopiya, v. 19, no. 3, 1965, 387-391

TOPIC TAGS: transport equation, Maxwell equation, geometric optics, nonlinear equation

ABSTRACT: Although much theoretical optics is based not on the exact Maxwell equations but on the simpler transport equations (geometrical optics), which have given good results, especially when applied to stimulated emission, the range of validity of geometrical optics remains unclear. The author therefore compares solutions of the transport equations and the exact solutions of the one-dimensional Maxwell equations, which are rewritten for this comparison in terms of the energy flux (P) and the energy density (W). It is shown that whereas the transformed Maxwell equations are difficult to solve because they contain nonlinear terms, the equations reduce to the well-known nonstationary transport equations if the nonlinear terms are dropped. This provides a criterion for the validity of the transport theory. It is shown ultimately that the transport equation is valid fully only for pure exponential solutions, and the results become unreliable whenever the solutions are extended to include nonstationary problems that do not reduce to exponential ones. These conclu-

Card 1/2 UDC: 535.2.001.1

L 11998-66
ACC NR: AP5022862

sions do not affect the validity of the transport equations for noncoherent light waves, provided the averaging of the sums of the waves over a random distribution of initial phases leads to the same result as averaging over time and space. Author thanks B. I. Stepanov and P. A. Apanasevich for interest and advice. Orig. art. has: 16 formulas.

SUB CODE: 20/ SUBM DATE: 19Jun64/ ORIG REF: 004/ OTH REF: 001

Card 2/2

L 04764-67 EWT(l)/T IJP(c)

ACC NR: AP6025977 SOURCE CODE: UR/0051/66/021/001/0143/0144

AUTHOR: Khapalyuk, A. P.

69
67
B

ORG: none

TITLE: Symposium on nonlinear optics. A report

SOURCE: Optika i spektroskopiya, v. 21, no. 1, 1966, 143-144

TOPIC TAGS: optic conference, optic research, optic material, high energy interaction, high energy scattering, photon, quantum generator

ABSTRACT: The author reports on the proceedings of the Symposium on Nonlinear Optics (4-11 June 1965) organized by the Institute of Physics, Academy of Sciences of the Belorussian SSR and the Belorussian State University. 146 delegates from 40 scientific and industrial organizations of the Soviet Union took part in the symposium. V. M. Fayn presented a paper on "Characteristics of interactions of high energy fluxes and matter," dealing with the problems in measuring the properties of nonlinear parameters. It was noted that the commonly used analysis method of relating the vector of polarization to the magnitude of the electromagnetic field in a number of cases (extra high energy flux resonance effects) is not sufficiently accurate. A. M. Bonch-Bruyevich and V. A. Khodovoy devoted their presentation to the topic of "Multi-photon processes". The physical interpretation and practical applications of multi-photon processes were

Card 1/2 UDC: 621.375.9 : 535.004.1

L 04764-67

ACC NR: AP6025977

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discussed. The difficulties of experimental determination of nonlinear properties in matter were noted. A. M. Samson reported on "Nonlinear phenomena in quantum generator". In following discussions, the difficulties in solving the nonlinear Maxwell's equations were mentioned. Other subjects included the feasibility of applying balance equations to the calculation of nonlinearities, problems of stability and interactions in the generating media. S. A. Akhmanov discussed the "Multiplication, addition and subtraction of optical frequencies," utilizing nonlinear optical media. Other speakers reported on their work in the field of nonlinear and coherent optics.

SUB CODE: 20/ SUBM DATE: none

kh

Card 2/2

KHAPANTSEV, I. V.

VASIL'YEV, S.A., kandidat tekhnicheskikh nauk; KHAPANTSEV, I.V., inzhener

New OV-10 grain cleaning machine. Sel'khozmashina no.8:3-6 Ag'55.
(MLRA 8:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya
(Grain--Cleaning) (Agricultural machinery)

FEDOSEYEV, B.V., kandidat tekhnicheskikh nauk; KHAPANTSEV, I.V., inzhener.

Clover hulling and cleaning attachment for the C04 self-propelling combine. Sel'khozmashina no.6:10-12 Je '56. (MLRA 9:8)
(Combines (Agricultural Machinery)) (Clover)

VAKHROMEYEV, V.; KHAPANTSEV, I.

The OVV-20 self-propelled grain-cleaning machine. Biul.tekh.-ekon. inform. no.9:53-54 '60. (MIRA 13:10)
(Grain—Cleaning)

VAKHRAMEYEV, V.A.; KHAPANTSEV, I.V.

OVV-20 grain-cleaning machine. Trakt.i sel'khozmash. 30 no.10: 34-35 O '60. (MIRA 13:9)

(Grain--Cleaning)

KHAPANTSEV, V.V., sostavitel'

[Suburban timetables: Moscow - Monino - Zagorsk, Moscow Railroad; summer 1961] Raspisanie dvizheniia prigorodnykh poezdov: Moskva - Monino - Zagorsk, Moskovskaia zh.d.; leto 1961 g. Moskva, Transzheldorizdat, 1961, 125 p. (MIRA 14:6)
(Moscow--Railroads--Timetables)

KHAPANTSEVA, L. A.

Journal of the American
Ceramic Society
Vol. 37 No. 5
May 1, 1954
Cements, Limes, and Plasters

Study of the microstructure of hardening cement stone in reflected light. A. E. Shilkin and L. A. Khapantseva. *Izvest. 19* (6) 9-11 (1953).—A study of hardening cement in reflected light under the takeroscope reveals three structural components: (a) new clearly visible crystalline formations (crystalline concretion), (b) apparent isotropic mass which fills the crystalline concretion, and (c) incompletely hydrated grains of clinker. The nature of the new formations and of the isotropic mass is not known. Three photos of structure.

B Z K

SHEYKIN, A.Ye., prof.; LIBMAN, A.Ya.; GUN TSYA-SEN', inzh.; UR'YEV, TS.D., inzh.; KHAPANTSEVA, L.A., inzh.

Rapid hardening portland cements for making precast reinforced concretes. Bet. i zhel.-bet. no.2:68-71 F '59. (MIRA 12:3)
(Cement) (Concrete--Testing)

KHAPAVA, Sergey Arsen'yevich

[Bacteriuria] [Bakteriuriia. Tbilisi, Gos.izd-vo "Sabchota Sakartvelo"] 1963. 75 p. [In Georgian] (MIRA 17:4)

KHAPAYEV, A., podpolkovnik zapasa

For victory. Grazhd.av. 18 no.2:16-18 F '61. (MIRA 14:3)
(World War, 1939-1945--Aerial operations)

KHAPAYEV, A., podpolkovnik zapasa

Competing for the title of communist labor group. Tyl i snab. Sov. Voor. Sil 21 no.12:30-35 D '61. (MIRA 15:1)
(Russia--Army)

KHAPAYEV, A.

A pilot of long-range and nonstop flights. Grazhd. av. 20 no.9:4-5 S '63. (MIRA 16:8)
(Air pilots)

L 47369-65 EWT(1) IJP(c)
ACCESSION NR: AP5008751 S/0056/65/048/003/0921/0927

AUTHOR: Terman, I. M.; Bagrov, V. G.; Khapayev, A. M.

TITLE: Electromagnetic radiation from a neutron in an external magnetic field

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 3, 1965, 921-927

TOPIC TAGS: neutron, neutron radiation, neutron polarization, neutron spin precession, electromagnetic radiation

ABSTRACT: It is shown that since a neutron moving in a constant and homogeneous magnetic field has an anomalous magnetic moment, it is capable of emitting radiation, due to spontaneous transitions of the neutron between states of different magnetic-moment orientations. The energy of interaction between the neutron and the radiation field is determined. It is shown that the neutron radiation is monochromatic for each fixed direction relative to the neutron velocity, but the radiation frequency is different for different directions. The radiation is shown to be accompanied always by a change in spin orientation. When the radiating neutrons are initially unpolarized, spontaneous polarization of the neutron beam is

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L 47359-65

ACCESSION NR: AP5008751

possible, and after some time interval the neutron spin acquires a preferred orientation opposite that of the magnetic field. The polarization properties of the neutron radiation are investigated. The probability of neutron radiation is compared with the corresponding probability of spontaneous β decay and it is shown that the processes connected with radiation of electromagnetic waves by neutrons can be of practical interest only in the case of large particle energies or at high [illegible] field intensities. An analysis of the behavior of the spin of longitudinally polarized neutrons in a magnetic field shows that [illegible] the spin of the neutron [illegible] sec, so that the change of spin orientation [illegible] experimentally when longitudinally polarized slow neutrons [illegible] with a magnetic field. Orig. art. has: 45 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 12Sep64 ENCL: 00 SUB CODE: NP

NR REF SOV: 005 OTHER: 001

Card 2/2 cc

KHAPAYEV, A.S., gvardii mayor tekhnicheskoy sluzhby

Device to imitate explosions for mock mines. Artill.zhur. no.8:59-60 Ag '53. (MIRA 13:3)
(Mines, Military)

Distr: 4E4j/4E2c

Thorutite, a new mineral of the thorium titanate group. Ya. D. Gotman and L. A. Khomyakova. *Zapiski Vsesoyuz. Mineral. Obshchestva* 87, 201-2(1958).—The mineral occurs in druses in strongly sericitized nepheline syenites, in assocn. with thorite, zircon, calcite, and subordinate barite and galena. The crystals have a short-prismatic habit, are up to 2 cm. in length and 1/2-1 cm. wide, and are black, with fatty luster; fracture conchoidal. In thinnest fragments they are translucent with dark-brown color, streak brown. Hardness 5.5; d. 5.87; isotropic, metamict; n above 2.1. After calcination at 1000° a powder diagram is developed which does not show any analogy to known titanates. Chem. analysis: TiO_2 38.1, ThO_2 54.10, SiO_2 0.44, Fe_2O_3 1.10, Al_2O_3 1.10, Nb_2O_5 1.12, Ta_2O_5 0.08, UO_2 1.48, UO_3 0.14, CaO 1.07, H_2O 0.94, ignition loss 1.72%, corresponding to the approx. formula 2[(Th,U,Ca[illegible])(Ti_2O_6)]·[illegible]O.

W. Eitel

A-U Mineralogical Society (for Gotman)

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16(1)

AUTHOR: Khapayev, M.M. SOV/55-58-5-4/34

TITLE: Expansion of the Hypergeometric and of the Degenerated Hypergeometric Functions Into Series in Terms of Bessel Functions (Razlozheniye gipergeometricheskikh i vyrozhdennykh gipergeometricheskikh funktsiy v ryady po besselevym funktsiyam)

PERIODICAL: Vestnik Moskovskogo universiteta, Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1958, Nr 5, pp 17 - 22 (USSR)

ABSTRACT: For the degenerated hypergeometric function F(a,c,z) the author obtains a double series in terms of Bessel functions. He proves the asymptotic character of this expansion for $a\to\infty$. With the aid of this expansion F(a,b,c,z) is developed into a double series in terms of degenerated hypergeometric functions. The asymptotic behavior of the solutions of the hypergeometric equation with the parameters a,b,c (and of the degenerated equation with the parameters a,c) is then investigated, if $a\to\infty$, $b\to\infty$ and $|z|\sim\frac{1}{|ab|}$ (or $a\to\infty$, $|z|\sim\frac{1}{|a|}$).

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Expansion of the Hypergeometric and of the Degenerated Hypergeometric Functions Into Series in Terms of Bessel Functions SOV/55-58-5-4/34

There are 3 references, 1 of which is Soviet, and 2 are English.

ASSOCIATION: Kafedra matematiki fizicheskogo fakul'teta (Chair of Mathematics of the Physical Department)

SUBMITTED: January 24, 1958

Card 2/2

KHAPAYEV, M.M.

Expansion of Bessel functions with large values of the argument and index as applied to Bessel functions with an index of $\frac{1}{3}$. Nauch.dokl.vys.shkoly; fiz.-mat.nauki no.2:83-85 '59. (MIRA 13:3)

1. Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova.
(Bessel's functions)

SVESHNIKOV, A.G.; KHAPAYEV, M.M.

A problem in aerial electric prospecting. Vest Mosk. un. Ser. mat., mekh., astron., fiz., khim. 14 no.2:113-120 '59 (MIRA 13:3)

1. Kafedra matematiki Moskovskogo gosuniversiteta.
(Electric prospecting) (Aeronautics in geology)

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AUTHORS: Rabinovich, Yu.L., Khapayev, M.M. SOV/20-129-2-9/6

TITLE: Linear Equations Involving a Small Parameter With the Highest Derivative in the Neighborhood of a Regularly Singular Point

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 2, pp 268-271 (USSR)

ABSTRACT: Consider the equation

$$(1) \qquad \bar{L}[w] = \varepsilon z^{m} w^{(m)} + \sum_{k=0}^{\infty} \varepsilon^{k} \bar{L}_k[w] = 0,$$

where $\bar{L}_k[w] = \sum_{s=0}^{m-1} z^s \bar{q}_{ks}(z) w^{(s)}$, where the $\bar{q}_{ks}(z)$ are holomorphic for $z=0$, $\bar{q}_{0,m-1}(0) \neq 0$, so that $z=0$ is a regularly singular point of the equations $\bar{L}[w] = 0$, $\bar{L}_0[w] = 0$. Let $\varphi_1(\varepsilon)$ be a root of the defining equation of (1) which for $\varepsilon \to 0$ passes over into the root φ_1 of the defining equation of the degenerated system ($\varepsilon = 0$) $\bar{L}_0[w] = 0$. Let $w_0(z)$ be the solution of $\bar{L}_0[w] = 0$ for which $\lim_{z \to 0} \frac{w_0(z)}{z^{\varphi_1}} = 1$; $w(z,\varepsilon)$ the

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SOV/20-129-2-9/66

Linear Equations Involving a Small Parameter With the Highest Derivative in the Neighborhood of a Regularly Singular Point

solution of $L[w] = 0$ for which $\lim_{z \to 0} \frac{w(z,\varepsilon)}{\varphi_1(\varepsilon)} = 1$. The authors show that under certain assumptions for $\varepsilon \to 0$ the solution $w(z,\varepsilon)$ passes over asymptotically into $w_0(z)$.

There are 4 references, 3 of which are Soviet, and 1 Belgian.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

PRESENTED: July 3, 1959, by I.G.Petrovskiy, Academician

SUBMITTED: July 2, 1959

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16.3300

AUTHOR: Khapayev, M. M.

TITLE: The Asymptotic Expansion of Special Functions

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, 1960, No. 3, pp. 3 - 9

TEXT: In the first part of the present paper an asymptotic expansion of the Bessel function $y_\nu(z)$ is given for large ν and $z = \sqrt{\nu\tau}$ in powers of $1/\nu$. In the second part the degenerate hypergeometric function $F(a, c, z)$ is asymptotically expanded for the case in which a, c, and z tend towards infinity. In the last part the hypergeometric function $F(a,b,c,z)$ is asymptotically expanded for the case in which a is large and $b = a\beta$, $c = \gamma a^2$. It must finally be said that many of the known asymptotic expansions may easily be obtained if the equations corresponding to those with small parameters and higher derivatives are known, when the canonical solutions in the neighborhood of non-essential singularities are studied. The author thanks Yu. L. Rabinovich for valuable advice.

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AUTHORS: Sveshnikov, A. G., Khapayev, M. M.

TITLE: On a problem of aerial electroreconnaissance

PERIODICAL: Referativnyy zhurnal, Matematika, no. 3, 1962, 77, abstract 3B329. ("Vestn. Mosk. un-ta. Ser. matem., mekhan., astron., fiz., khimii," 1959, no. 2, 113-120)

TEXT: Considered is the influence of the lowest stratum of the fog on the radiation resistance of a vertical electric dipole. The authors introduce an effective dielectric constant which characterises the electric properties of the fog, and for a vertical electric dipole, situated over the ideally conducting plane earth, they obtain the expression for the rate of change of the radiation resistance of the dipole caused by the lowest stratum of the fog. One points to the fact that a similar consideration also might easily be carried out for an horizontal dipole.

[Abstracter's note: Complete translation.]

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C 111/ C 333

16.3400

AUTHOR: Khapayev, M. M.

TITLE: Asymptotic Expansions of Solutions to Ordinary Linear Differential Equations Having Small Coefficients With Their Higher Derivatives in the Neighborhood of an Irregular Singular Point

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 6, pp. 1338-1341

TEXT: The author considers the equation

$$(1)\quad \sum_{k=m+1}^{n} \varepsilon^{k-m} \overline{p}_k(z,\varepsilon)\, W^{(k)} + \sum_{k=0}^{m} \overline{p}_k(z,\varepsilon) W^{(k)} = 0,$$

where

$$(2)\quad \overline{p}_k(z,\varepsilon) = \sum_{s=0}^{\infty} \varepsilon^s A_{k,s}(z) = \sum_{s=0}^{\infty} z^{-s} B_{k,s}$$

and the degenerated equation

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Asymptotic Expansions of Solutions to Ordinary Linear Differential Equations Having Small Coefficients With Their Higher Derivatives in the Neighborhood of an Irregular Singular Point

(3) $\sum_{k=0}^{m} \overline{p}_k(z,0)\, w^{(k)} = 0$ holds.

Let $\overline{p}_n(z,\varepsilon) = 1$; $\lim_{z\to\infty} \overline{p}_n(z,0) = B_{m,0}(0) \neq 0$. The point at infinity is irregular for (1) and in general also for (3). Let the equation

(4) $Q(\lambda,\varepsilon) = \sum_{k=m+1}^{n} \lambda^k \varepsilon^{k-m} B_{k,0}(\varepsilon) + \sum_{k=0}^{m} \lambda^k B_{k,0}(\varepsilon) = 0$

possess only simple roots $\lambda_k(\varepsilon)$. To every root $\lambda_k(\varepsilon)$ there corresponds a formal solution of (1):

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Asymptotic Expansions of Solutions to Ordinary Linear Differential Equations Having Small Coefficients With Their Higher Derivatives in the Neighborhood of an Irregular Singular Point

(9) $W_k(z,\varepsilon) = e^{\lambda_k(\varepsilon)z} z^{\sigma_k(\varepsilon)} \left[1 + \sum_{s=1}^{\infty} c_{k,s}(\varepsilon)\, z^{-s}\right]$.

Let $\varepsilon = e^{i\delta_0}$, $|z| = \varsigma$. Furthermore

(12) $\psi_k(\varsigma, \delta_0) = \arg\left[\lambda_k(\varepsilon) - \lambda_1(\varepsilon)\right]$, $2 \leq k \leq n$;

$\psi_k^{\,o} = \arg(\lambda_k^{\,o} - \lambda_1^{\,o})$

for $2 \leq k \leq m$; $\psi_k^{\,o} = \arg \mu_k^{\,o}$ for $m+1 \leq k \leq n$, where $\lambda_k^{\,o}$ are the only simple roots of $Q(\lambda, 0) = 0$ and $\mu_k^{\,o}$ the only simple roots of $\sum_{k=0}^{n-m} \mu^k B_{k+m,o}(0) = 0$. It is

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